The SILK Information Integration System

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The SILK system is a model-based tool-set supporting the simultaneous use of several heterogeneous information systems. SILK provides tools both for running queries spanning over several information sources (*mediation*) as well as the forming of an integrated system (*integration*).

The system builds on standards of software engineering. Static UML (Unified Modelling Language) descriptions extended with OCL (Object Constraint Language) constraints serve as models. Models can be imported and exported in XMI (XML Model Interchange) format. For querying the information sources an SQL-like OCL-based language is used. SILK is able to handle many different types of information sources such as relational databases, semi-structured data (e.g., XML), RDF sources, and web services.

The central component of SILK is the model warehouse, which contains metadata about the information sources, the applications, and the high-level views of end-users as well as the queries composed in terms of these models. The system provides tools for automatic acquisition of models, the comparison, the linking, the verification, and the unification of them. Queries can be posed on arbitrary models, i.e., on user views or directly on the level of information sources.

SILK is a logic based system: the core modules (reasoning, analysis, query optimisation, etc.) are implemented in Prolog using constraint programming. The interface modules (GUI, external API, source access) are implemented in Java.